

FIG. 1A

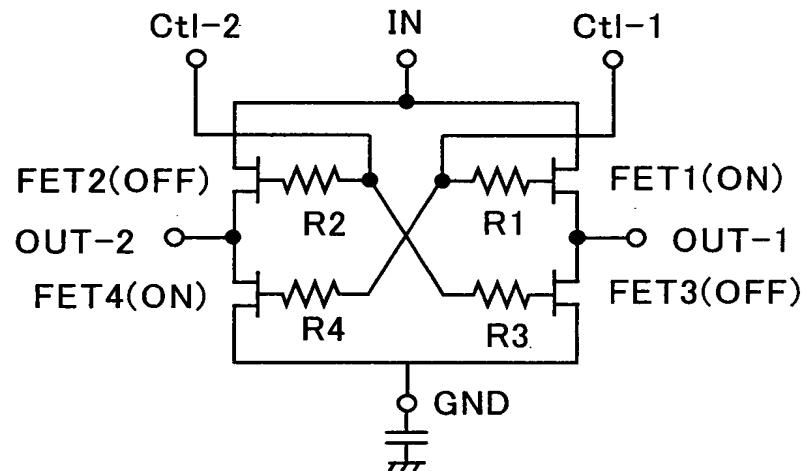


FIG. 1B

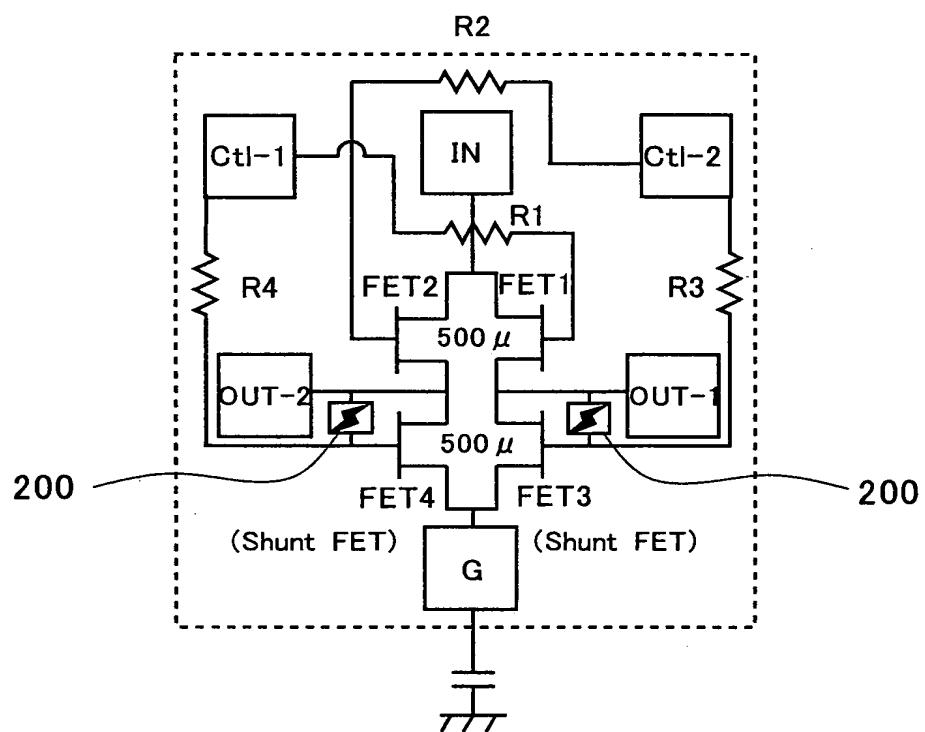


FIG.2

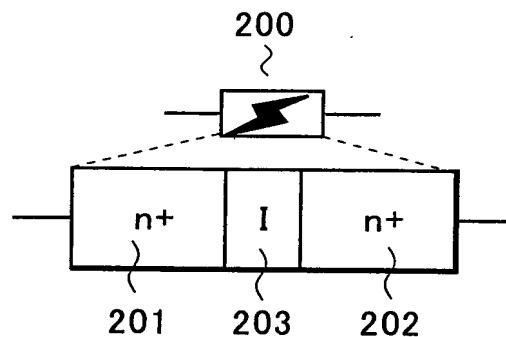


FIG.3A

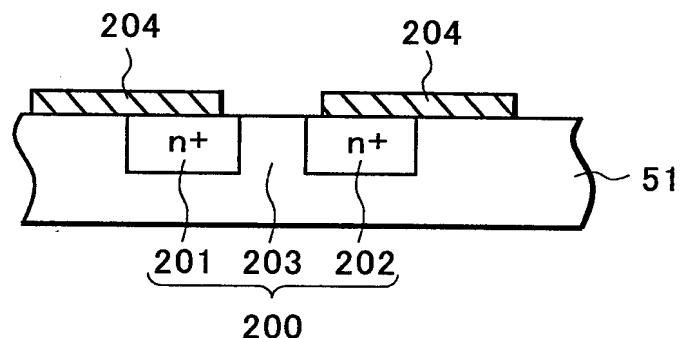
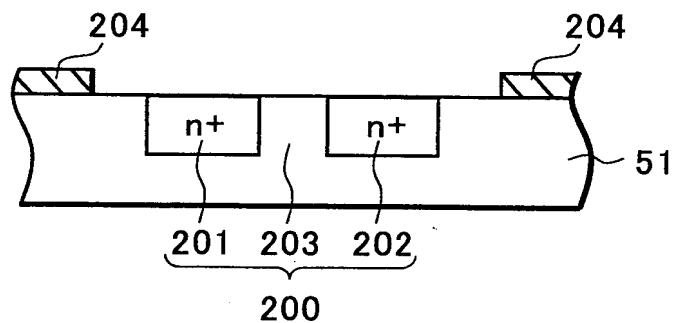
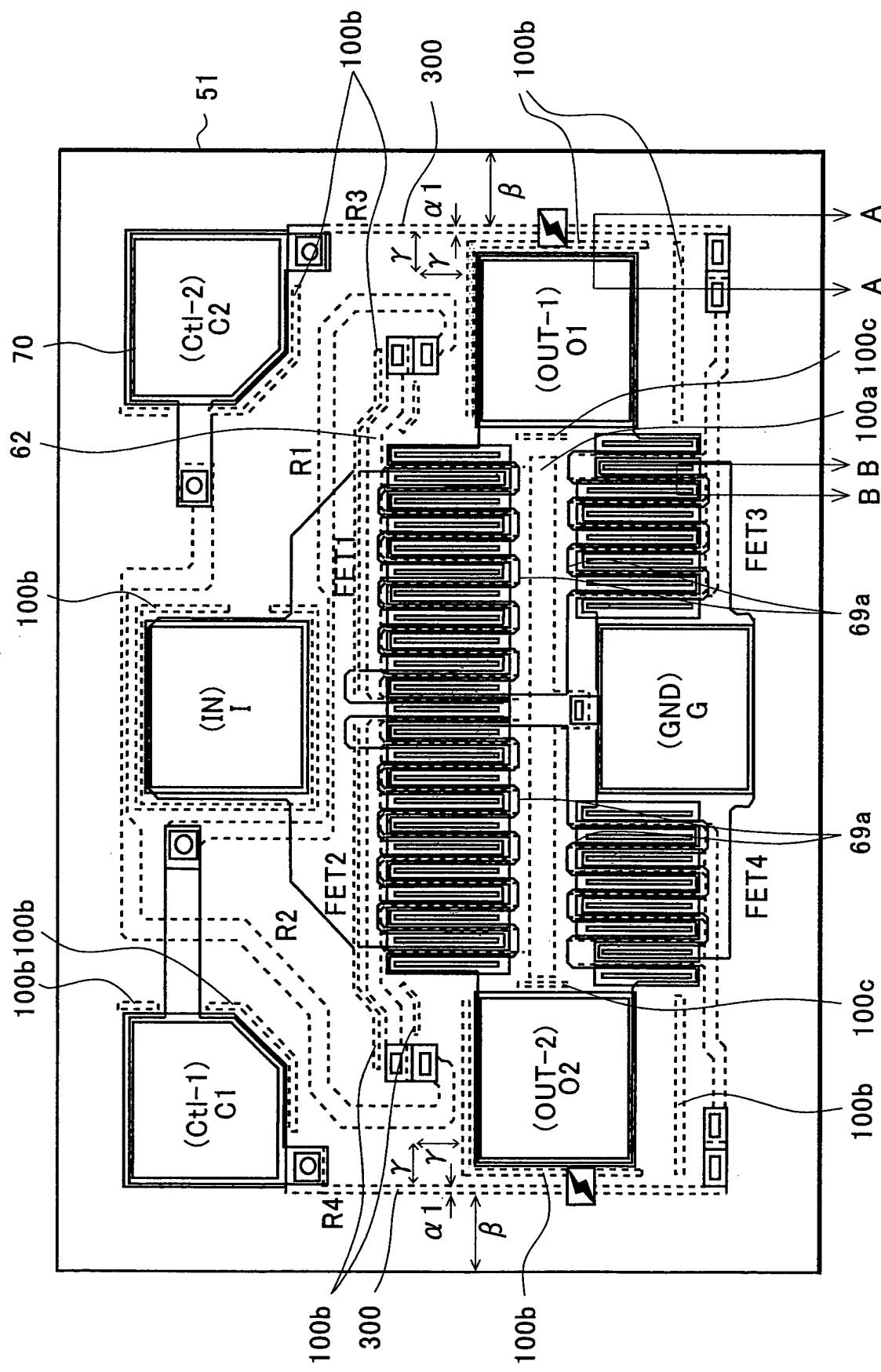


FIG.3B



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FIG. 4



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FIG.5

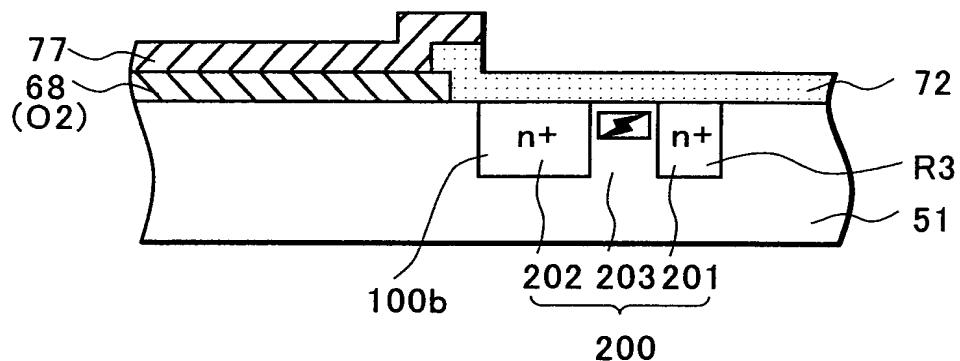


FIG.6A

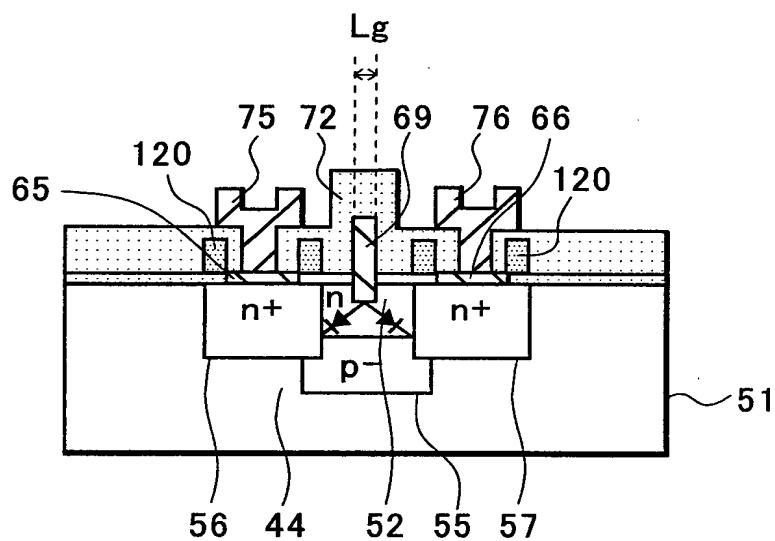


FIG.6B

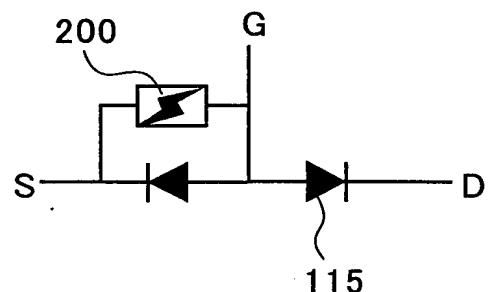


FIG.6C

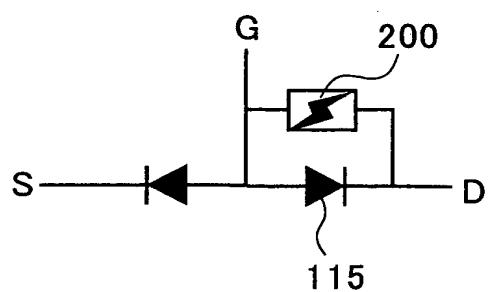


FIG.7

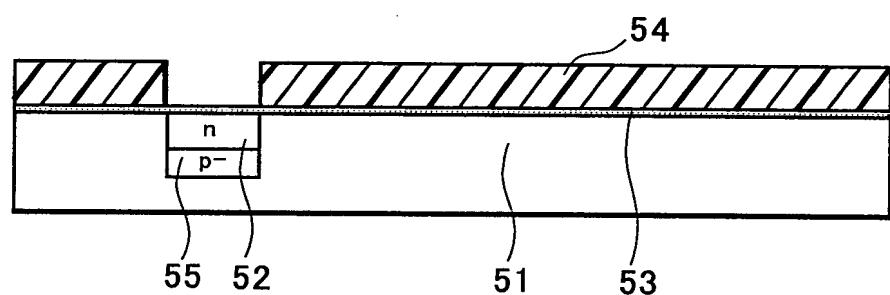


FIG.8

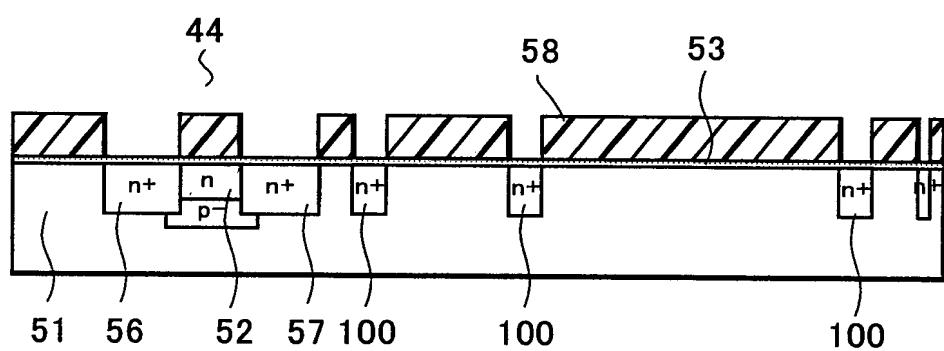


FIG.9A

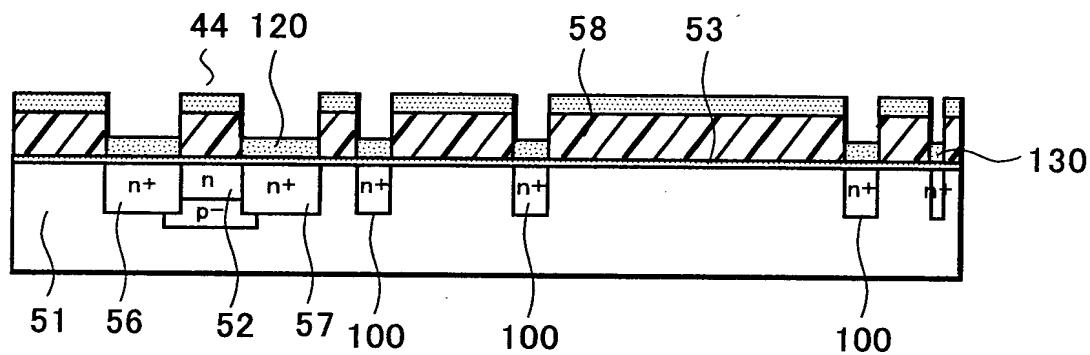


FIG.9B

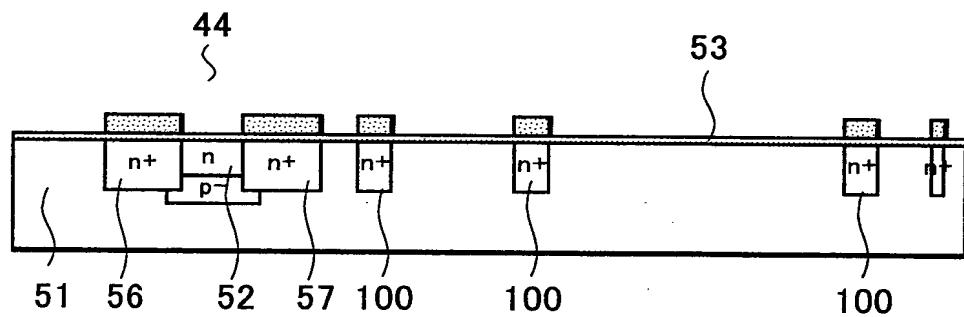


FIG.10A

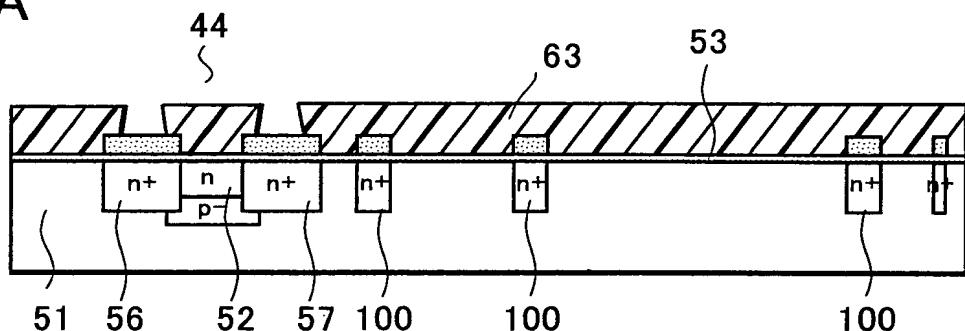


FIG.10B

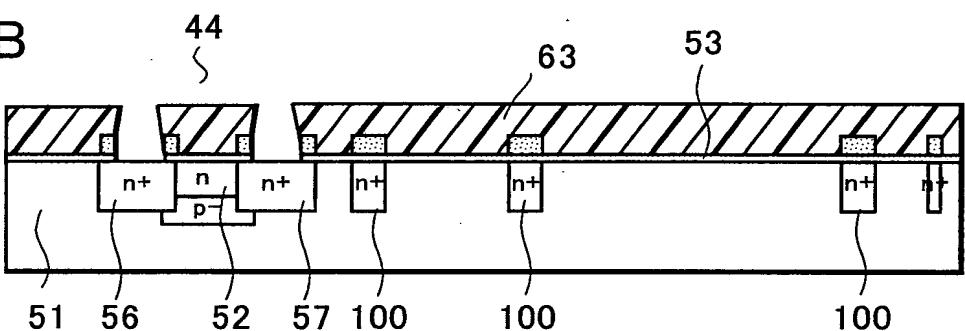


FIG.10C

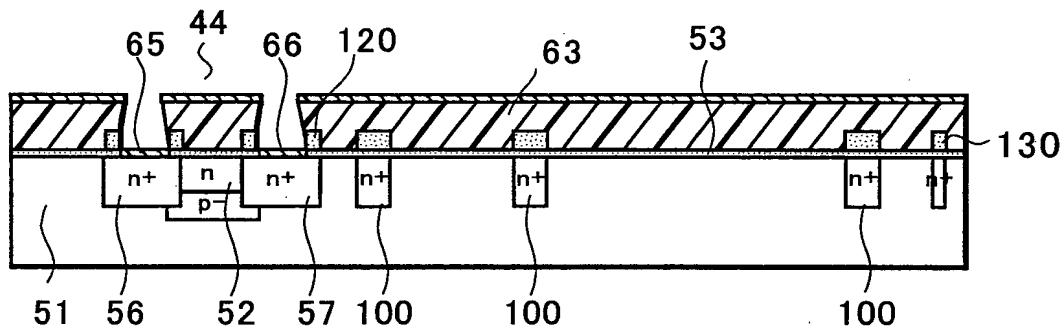


FIG.10D

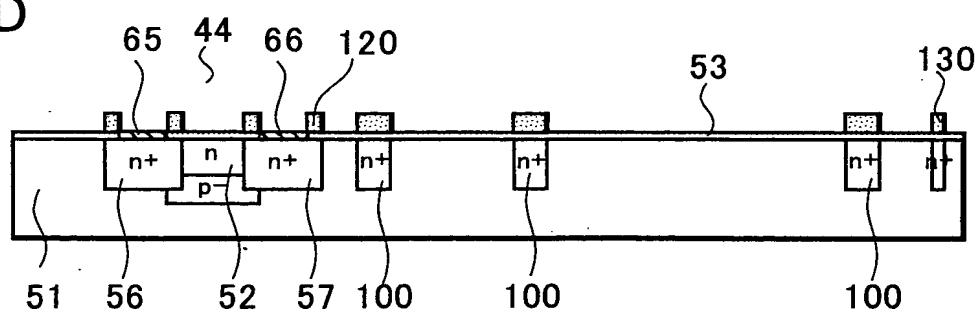


FIG.11A

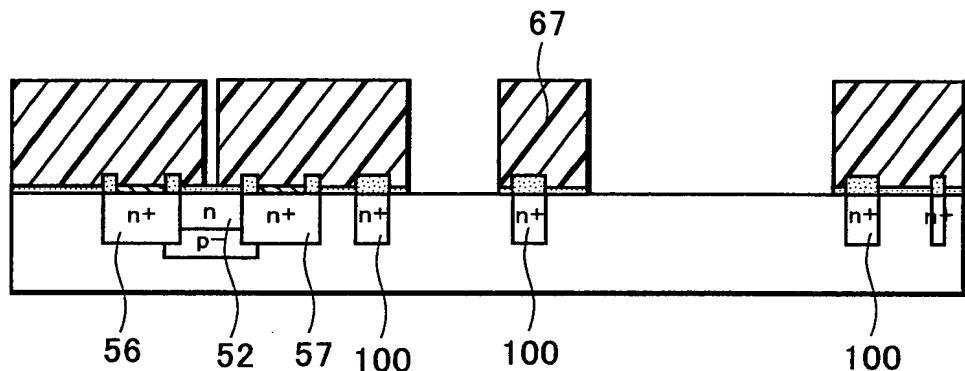


FIG.11B

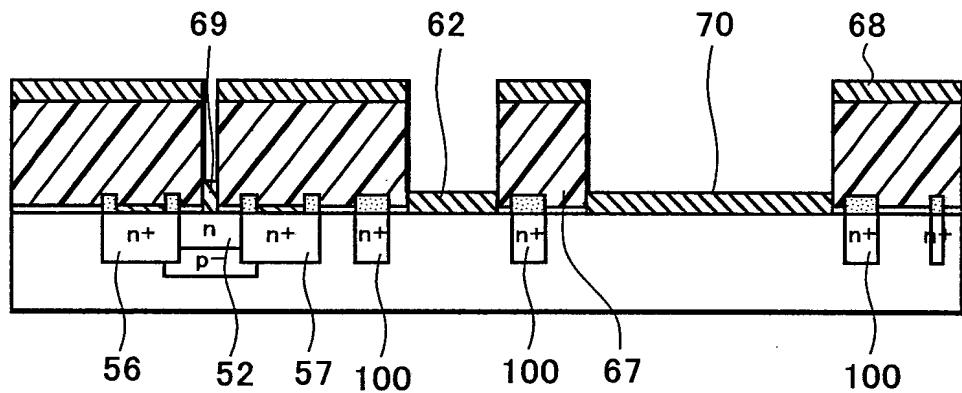


FIG.11C

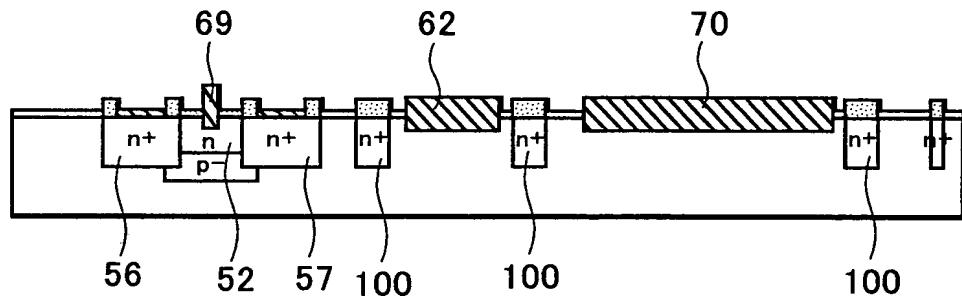


FIG.12A

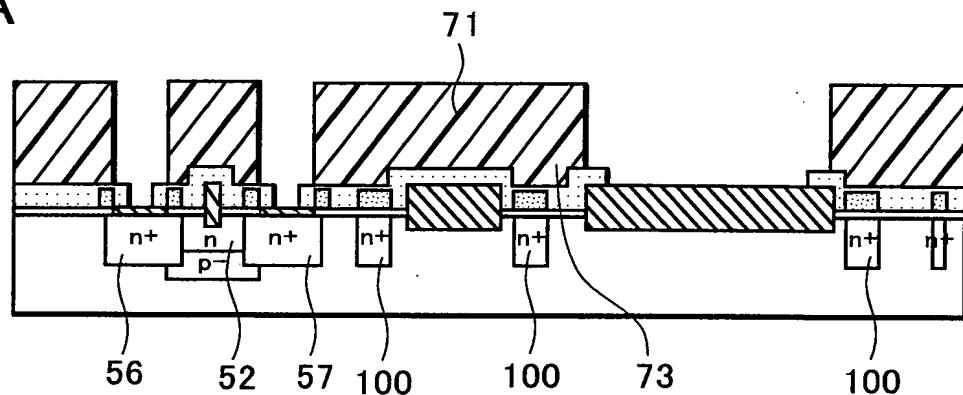


FIG.12B

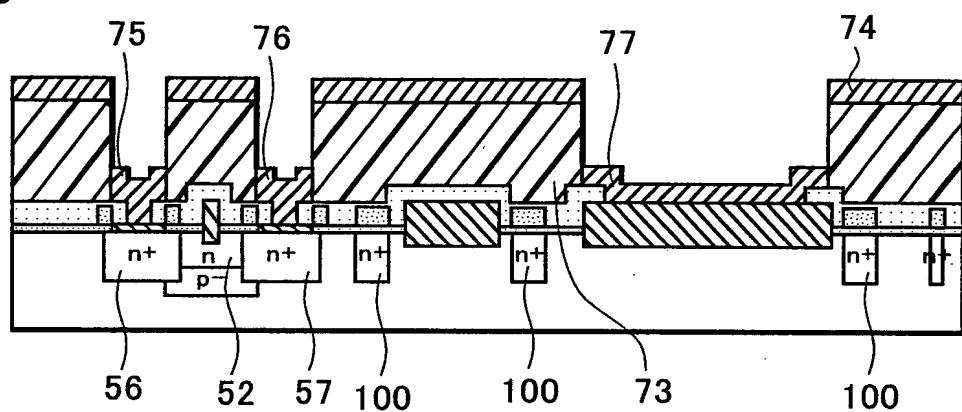
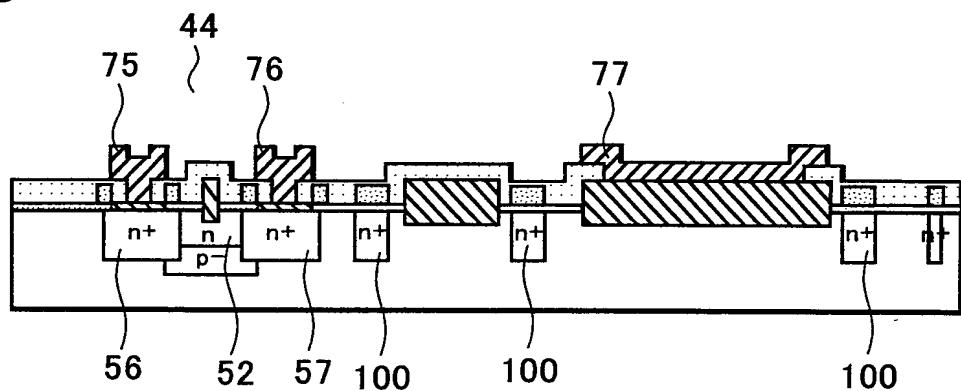
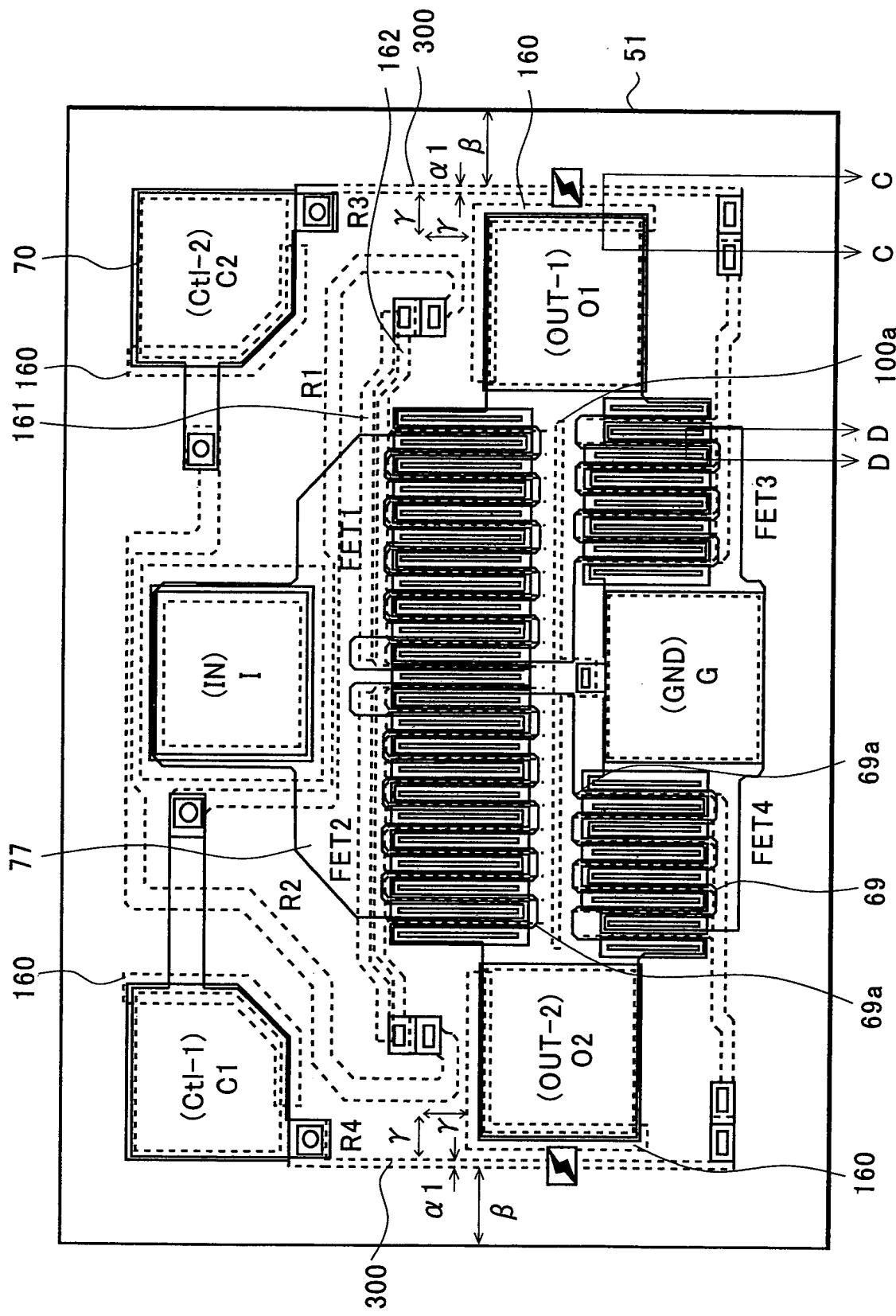


FIG.12C



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FIG. 13



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FIG.14A

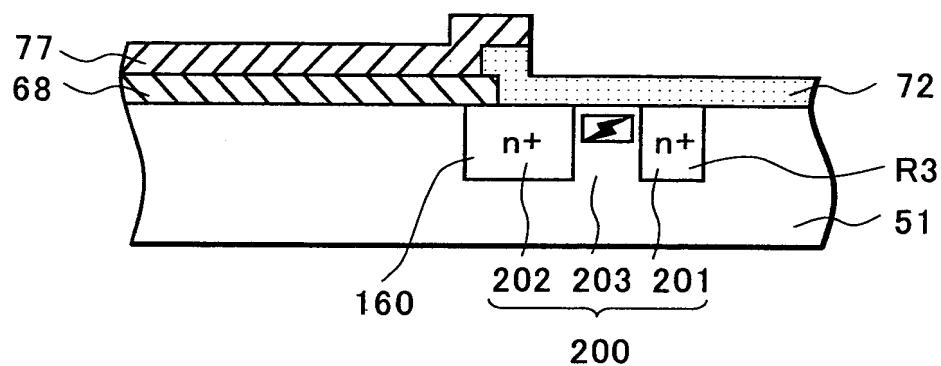


FIG.14B

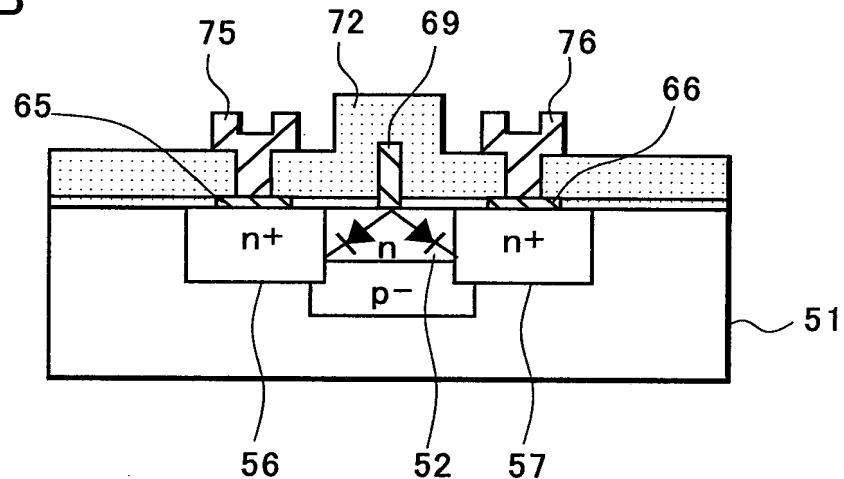


FIG.14C

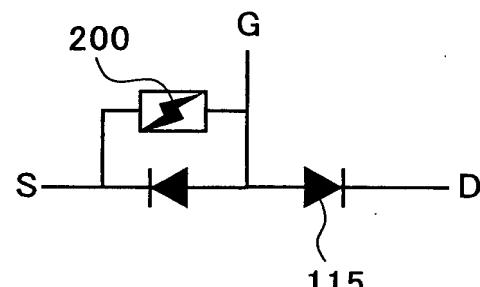
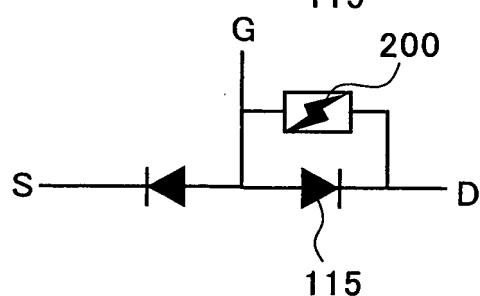


FIG.14D



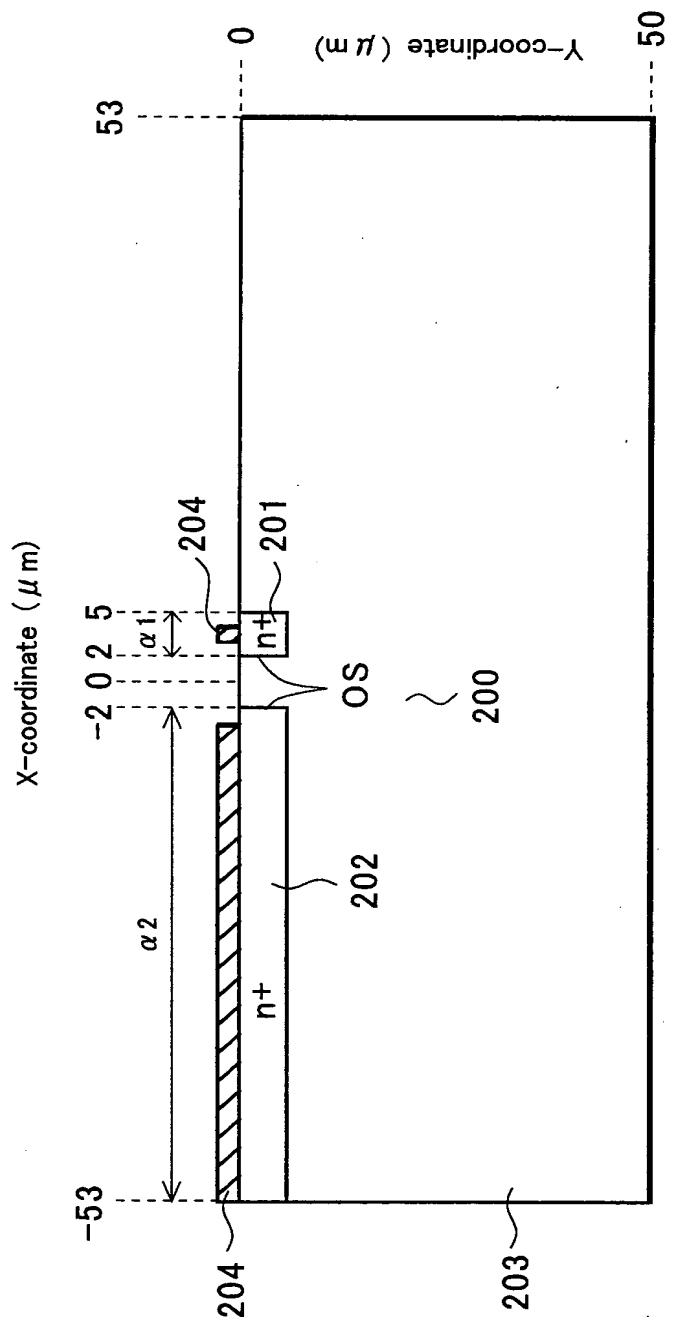
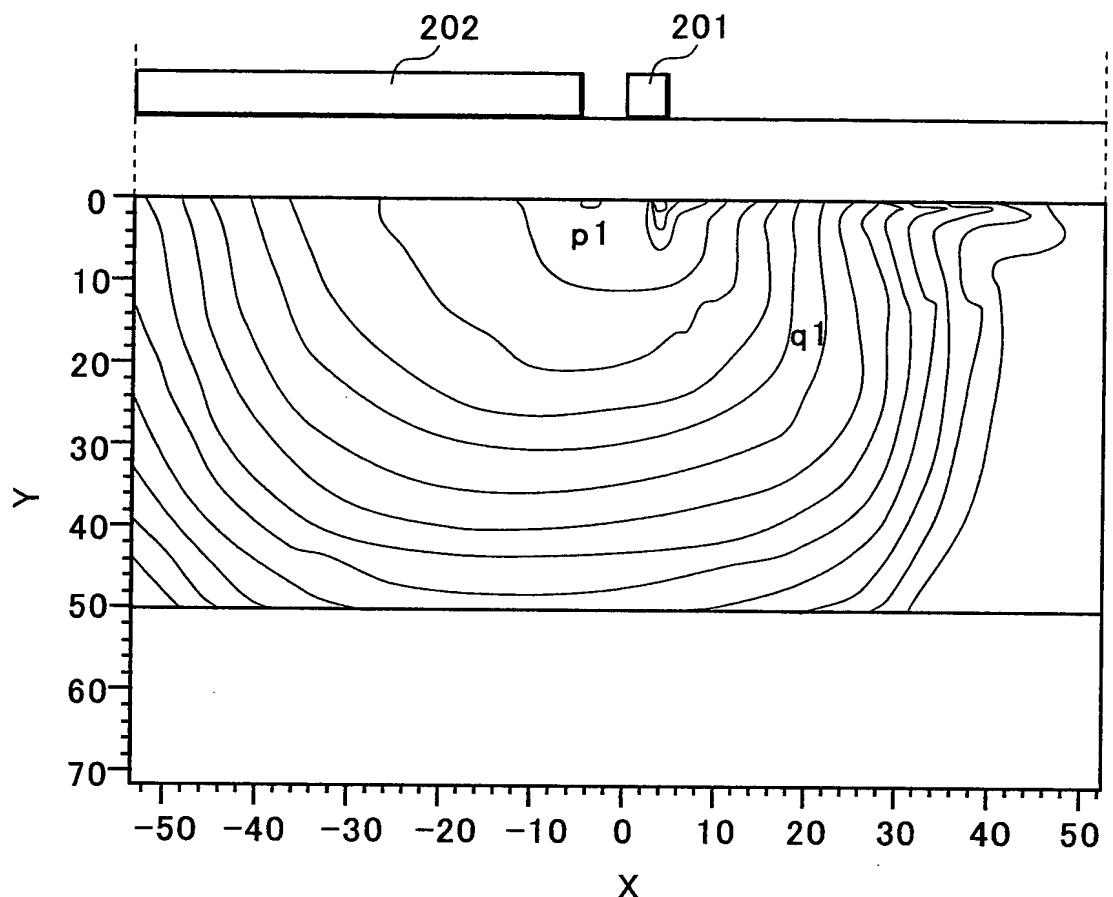


FIG. 15

FIG. 16

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First N+ region + Electron current density



Abs(eCurrentDensity)

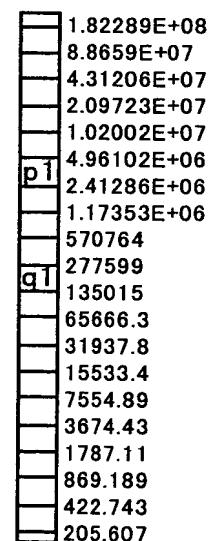
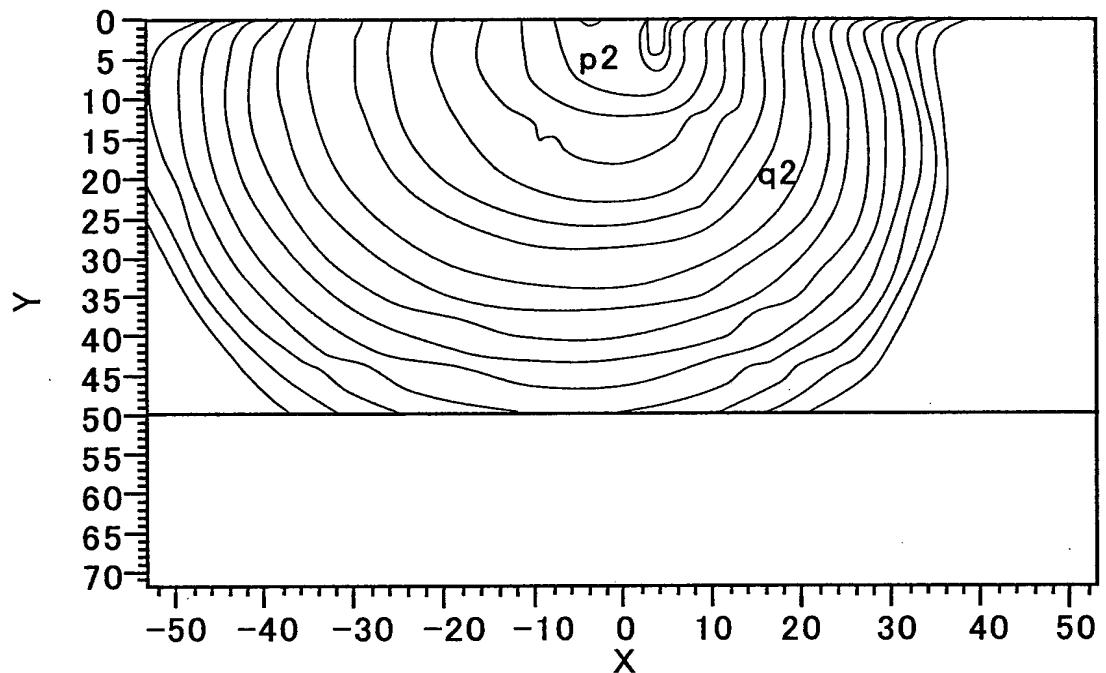


FIG.17

First N+ region + Hole current density



Abs(hCurrentDensity)

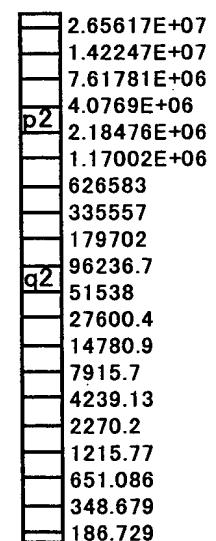


FIG.18

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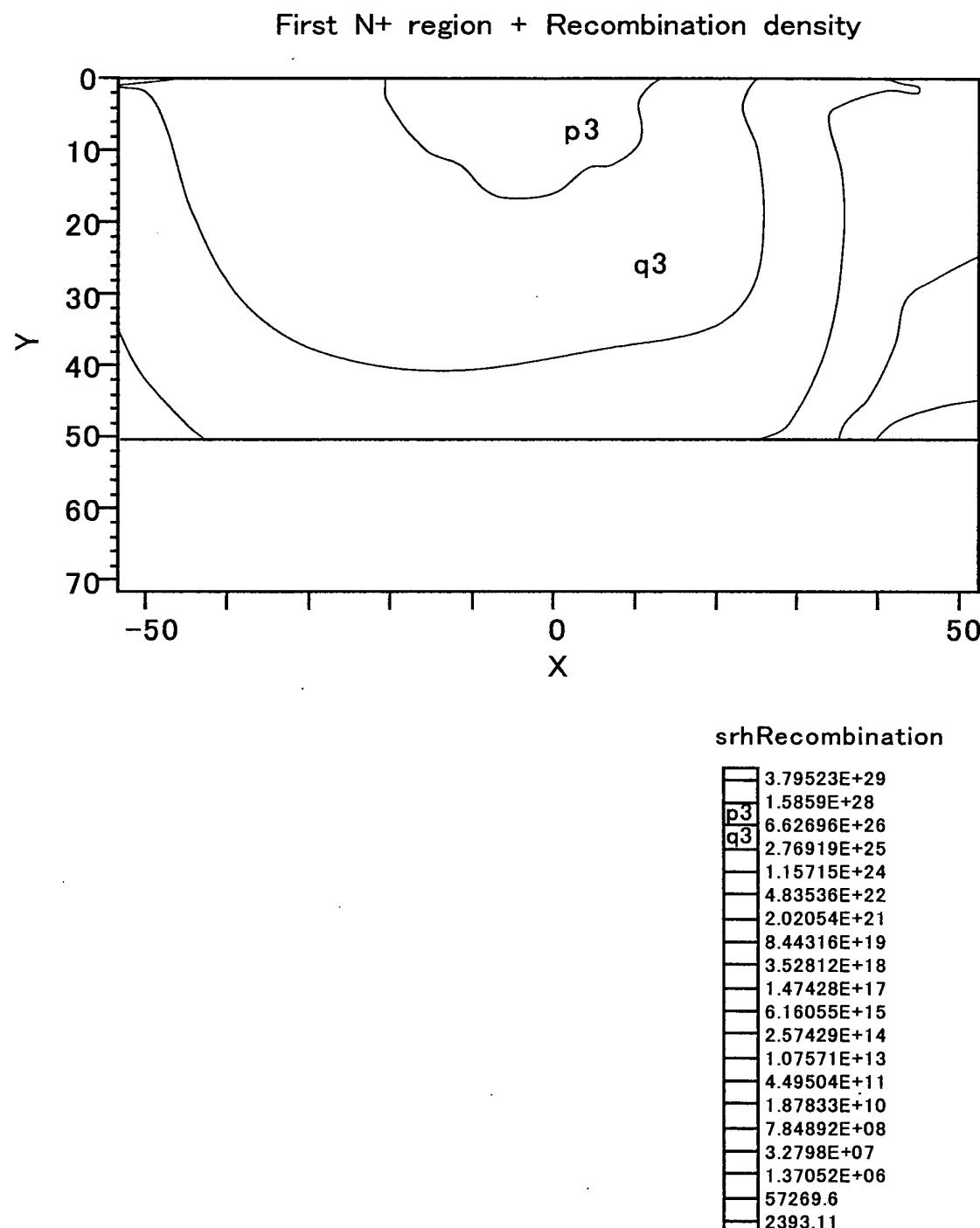


FIG.19A

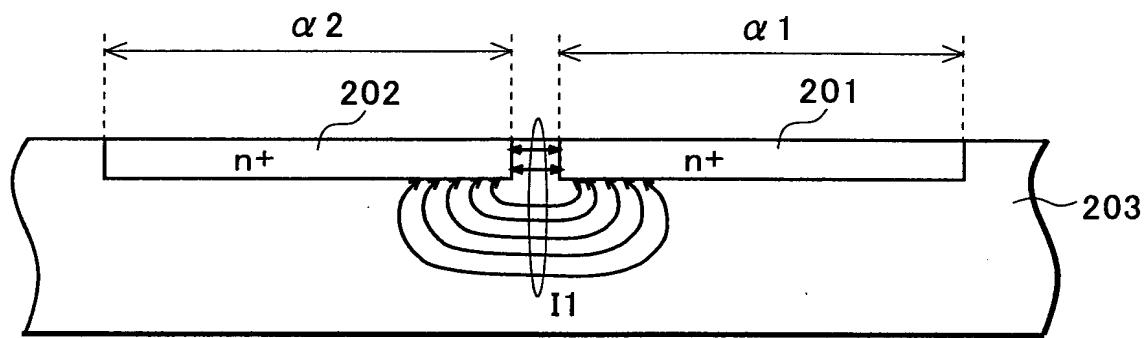


FIG.19B

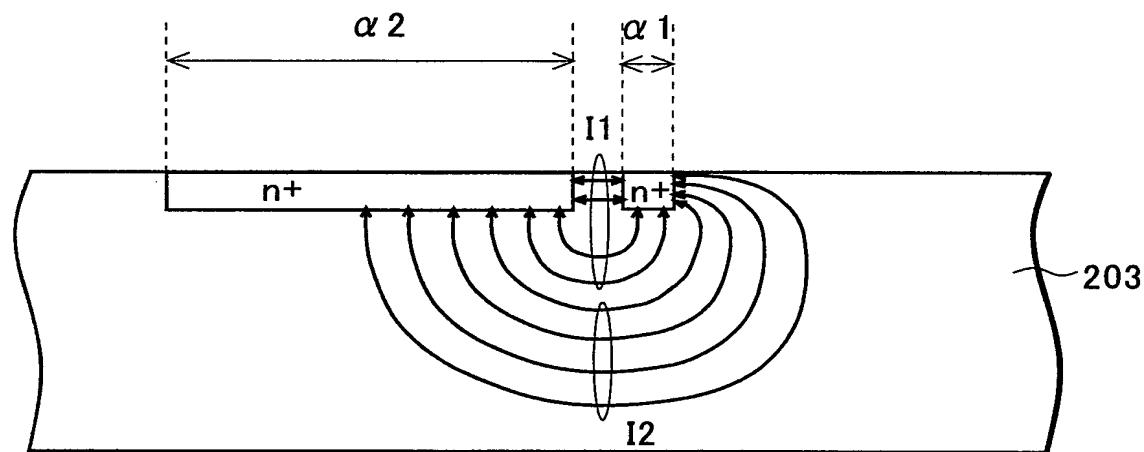


FIG.20

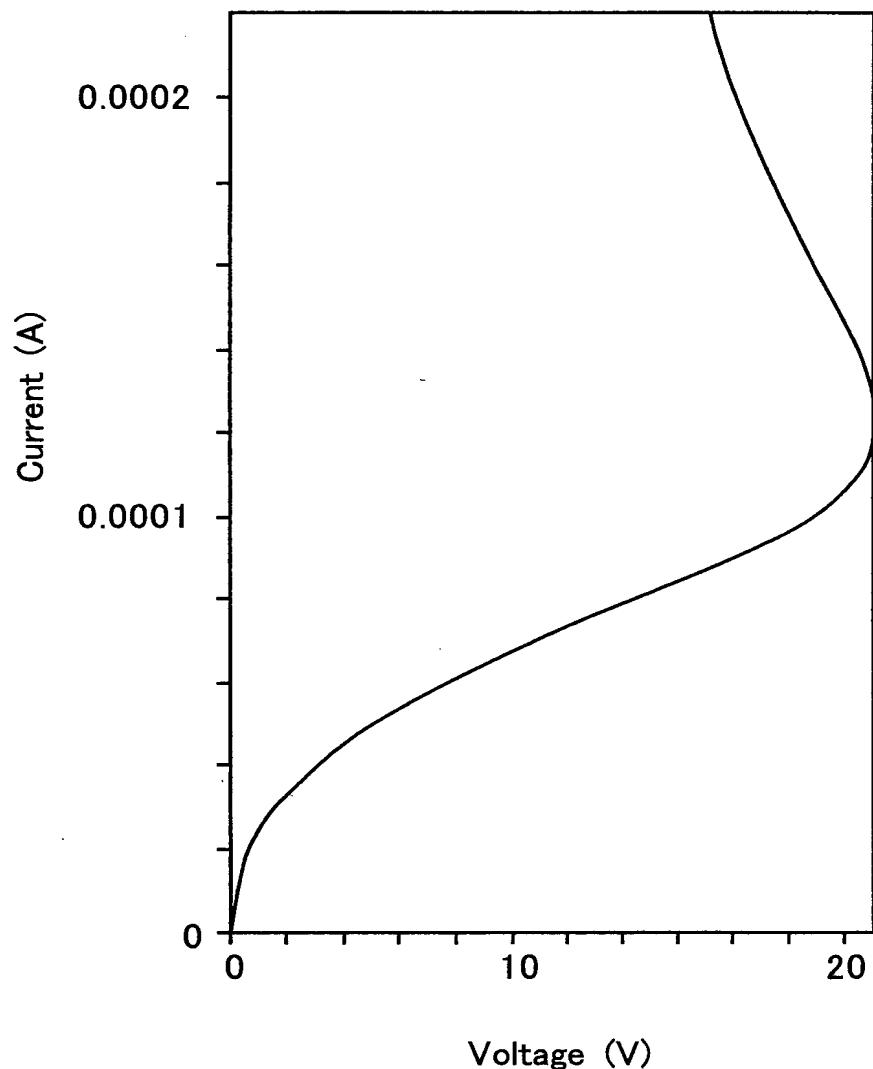


FIG.21

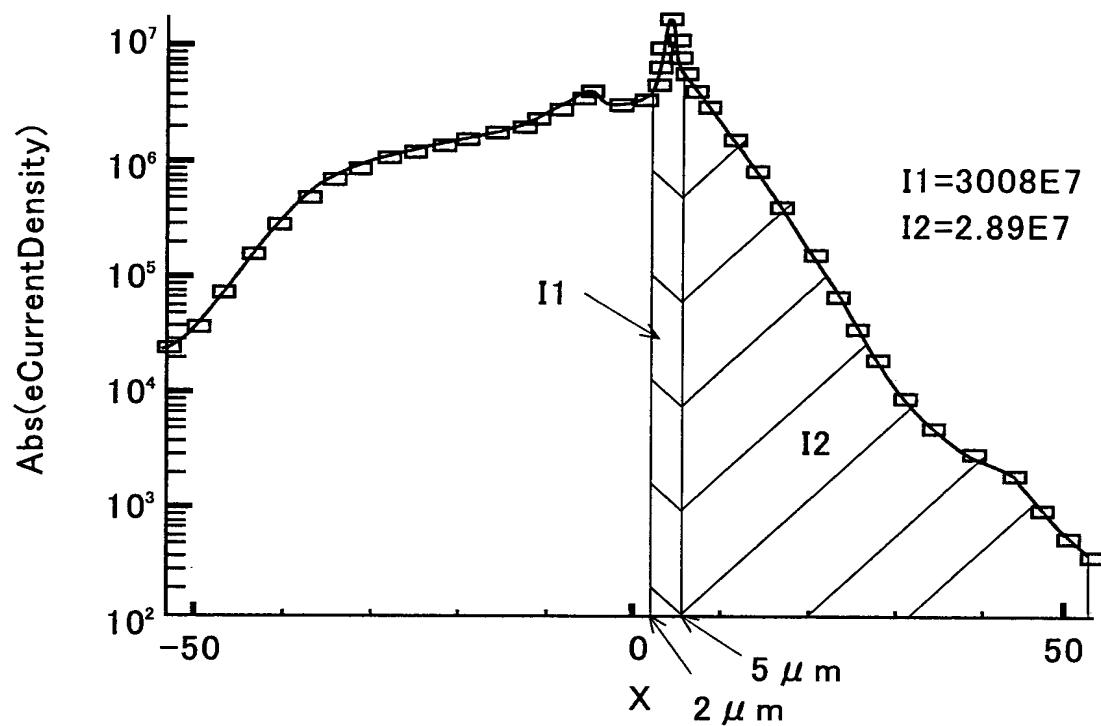


FIG.22A

Comparison of spreading of currents and recombination

	a-structure			b-structure-1			b-structure-2		
Electron current density	y_2	x_0	Product	y_2	x_0	Product	y_2	x_0	Product
	21.9	10.5	230.0	26	15	390.0	23.8	11.3	268.9
Hole current density	y_2	x_0		y_2	x_0		y_2	x_0	
	13.7	6	82.2	23.9	12.5	298.8	12.7	7.4	94.0
Recombination density	y_2	x_0		y_2	x_0		y_2	x_0	
	29.7	14.8	439.6	33.1	20	662.0	33.9	15.5	525.5

FIG.22B

b-structure-3		
y_2	x_0	Product
69	36.1	2490.9
y_2	x_0	
47.9	29.1	1393.9
y_2	x_0	
80 or more	43.9	3512 or more

FIG.22C

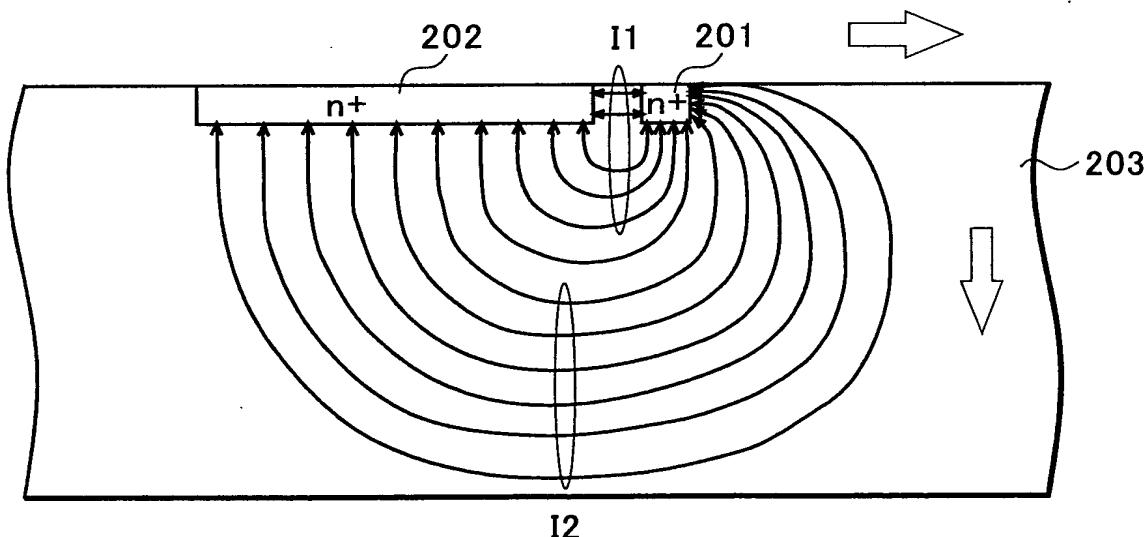


FIG.23

Relationship between the proportion of I_2
and the width of the first N^+ region

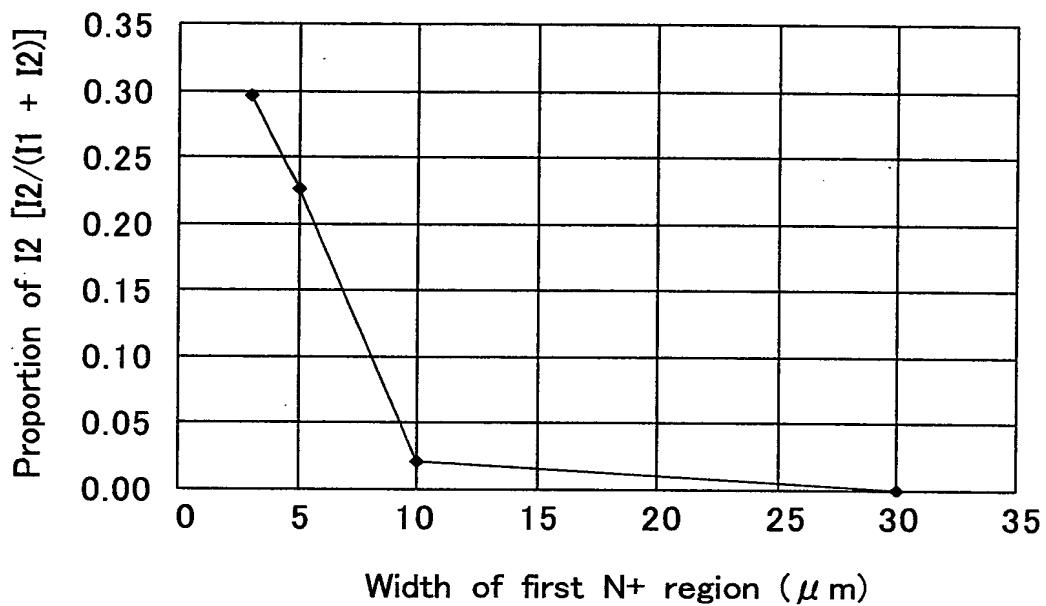


FIG.24A

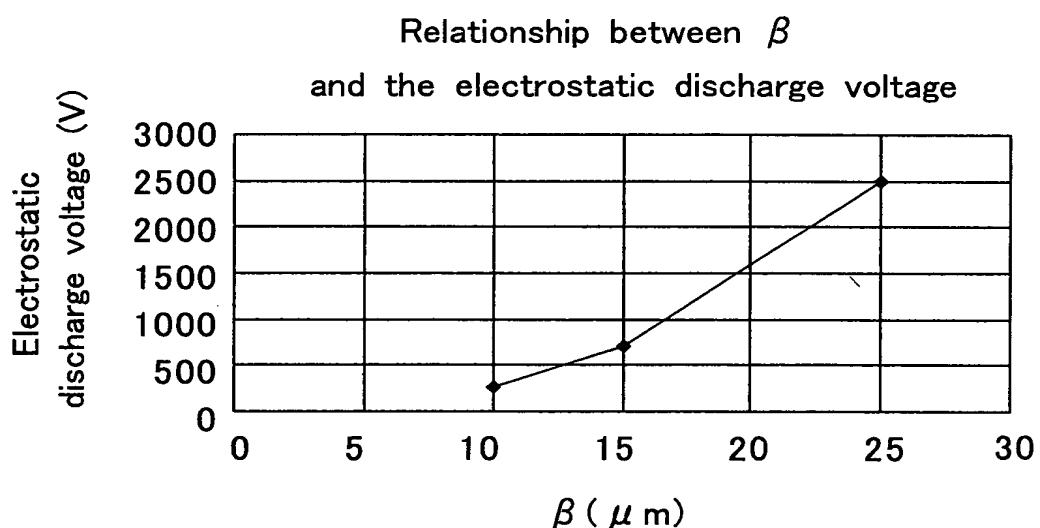


FIG.24B

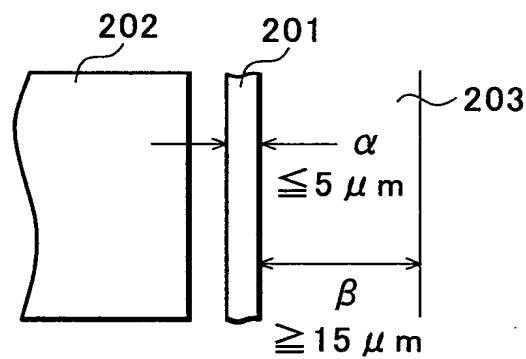


FIG.25A

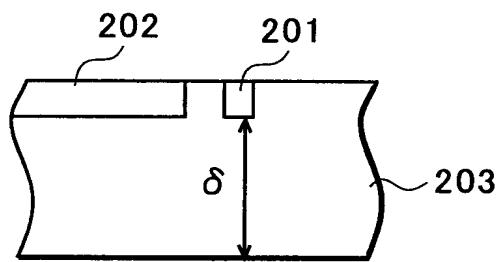


FIG.25B

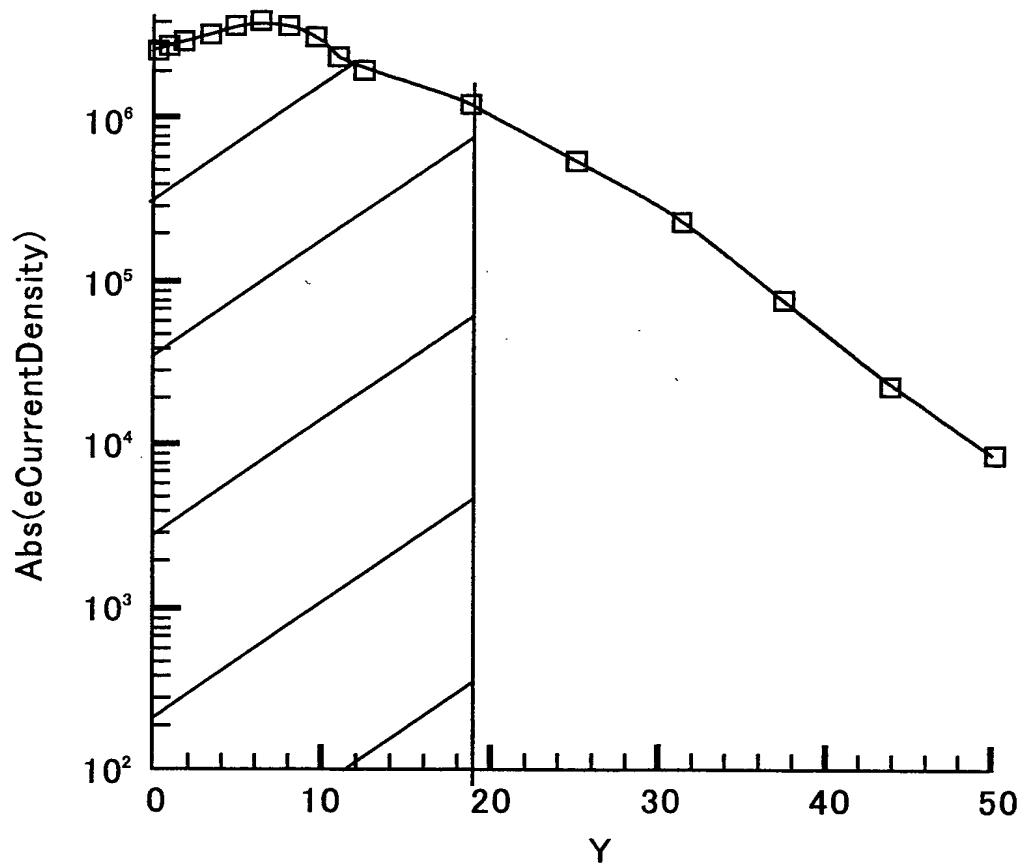


FIG.26A

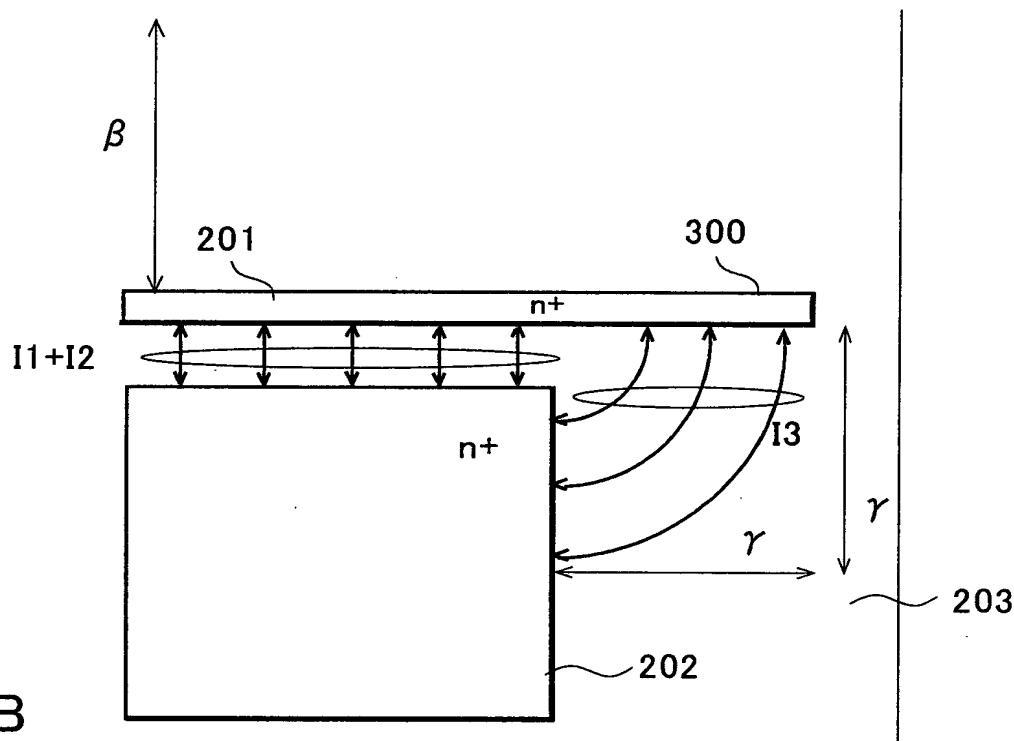
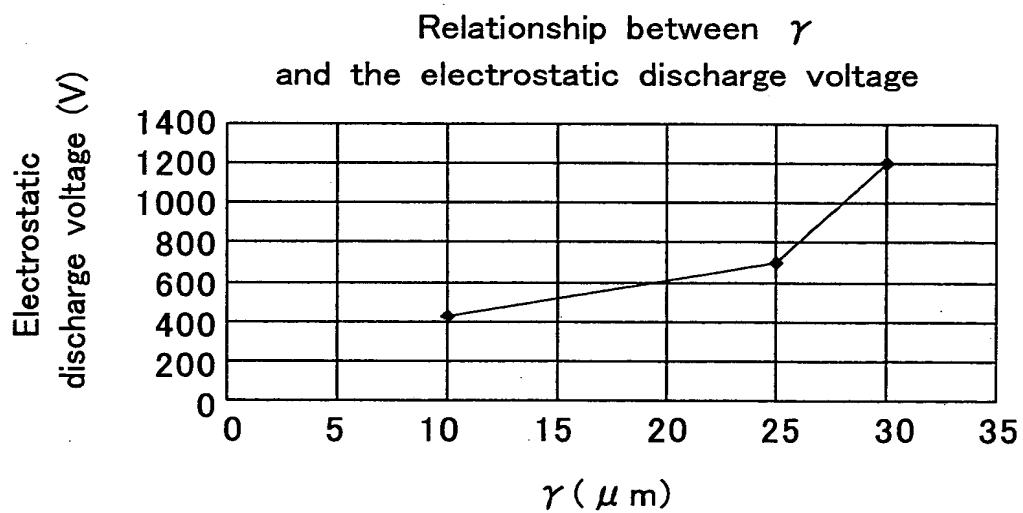


FIG.26B



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FIG.27

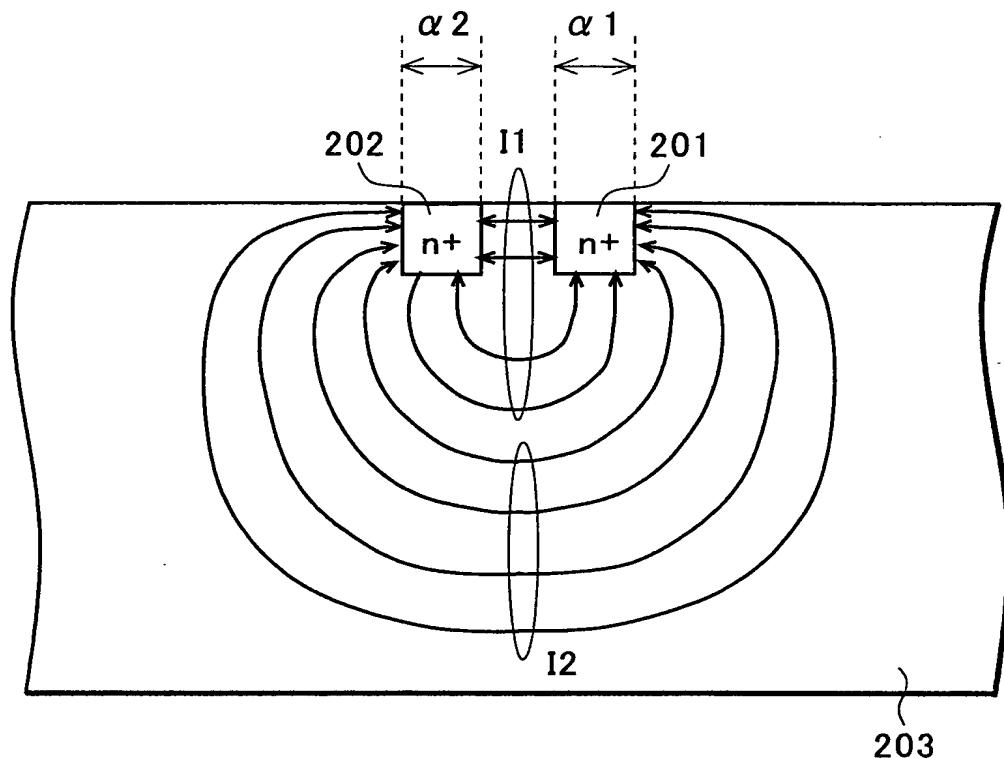
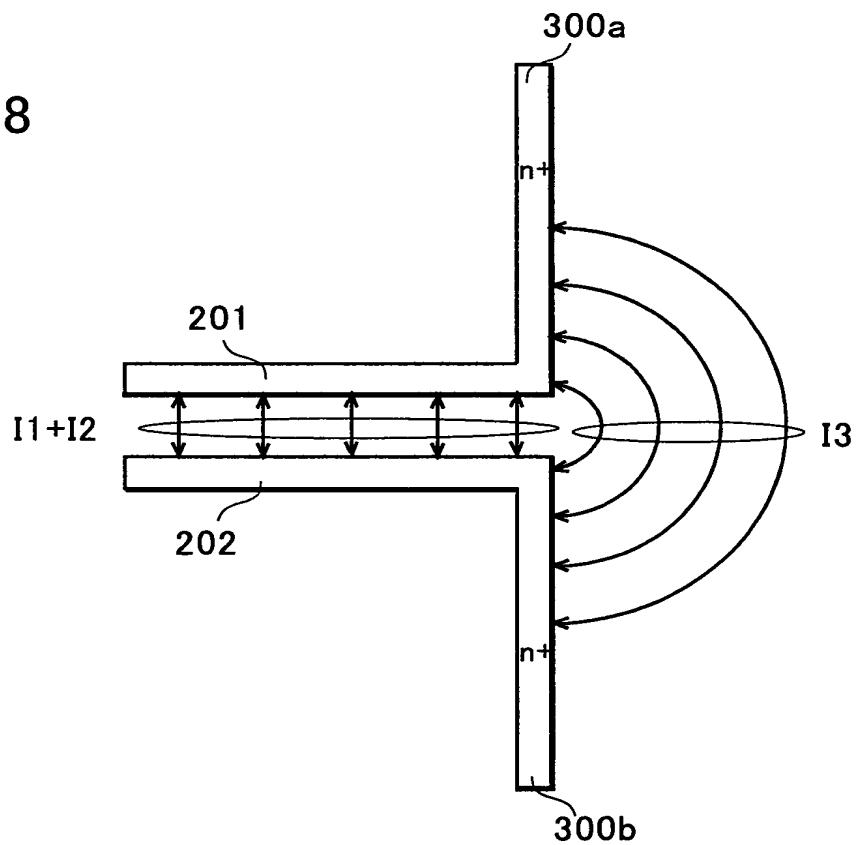


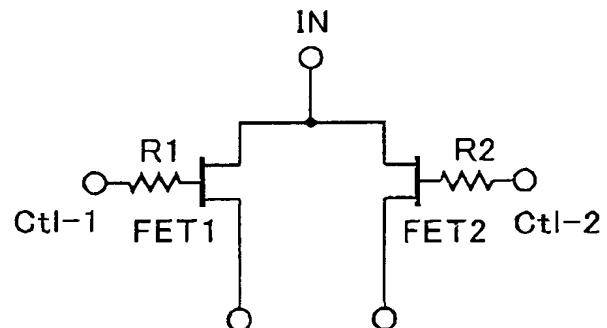
FIG.28



App No.: Not Yet Assigned
Inventor: Tetsuro ASANO et al.
Docket No.: 492322014200
Title: SWITCHING CIRCUIT DEVICE

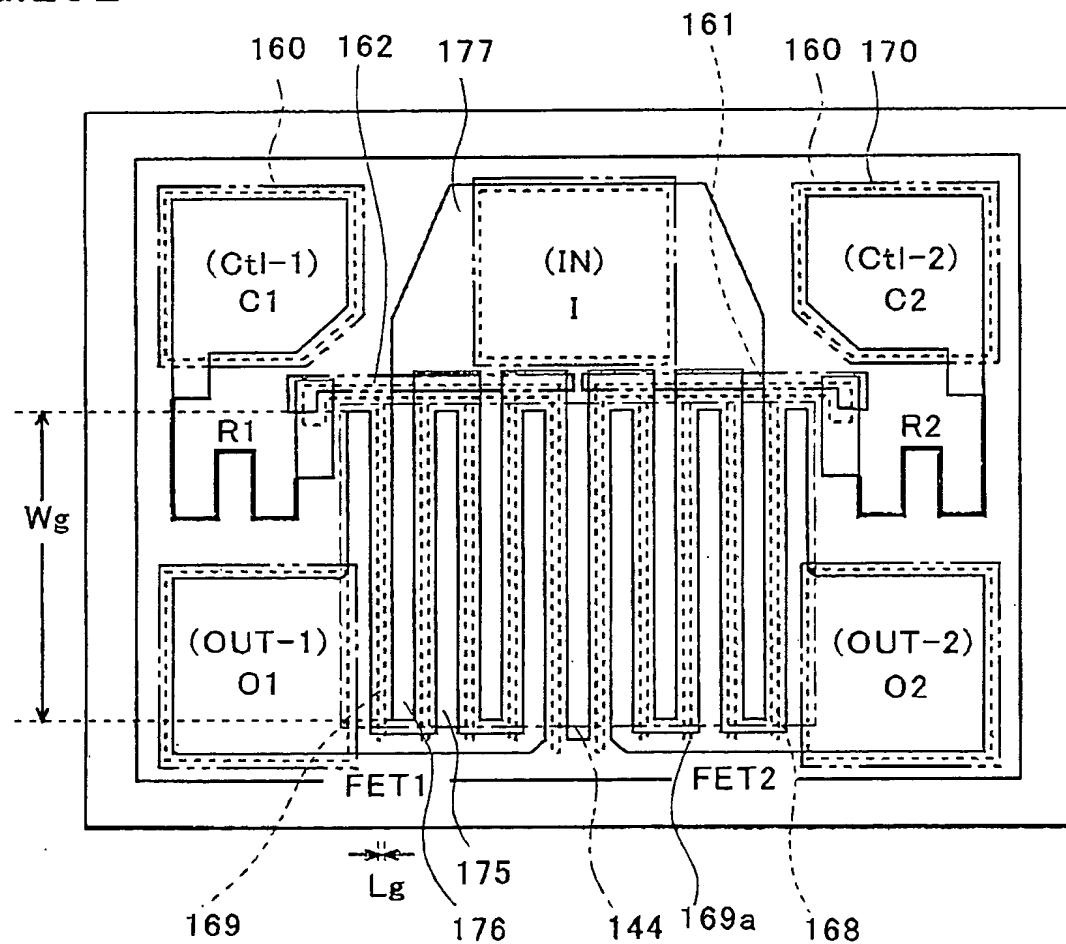
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FIG.29A



Prior Art

FIG.29B

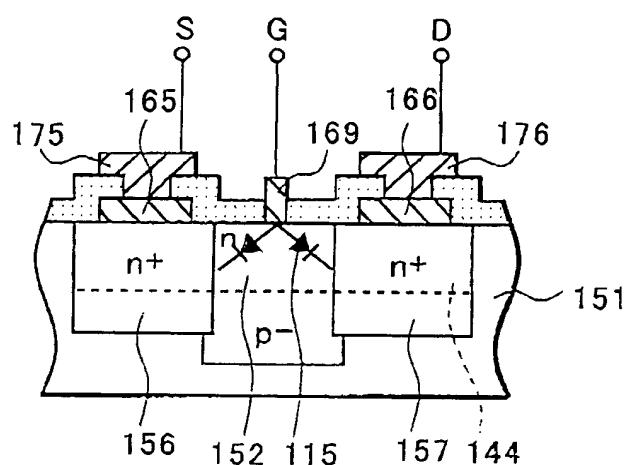


Prior Art

App No.: Not Yet Assigned
Inventor: Tetsuro ASANO et al.
Docket No.: 492322014200
Title: SWITCHING CIRCUIT DEVICE

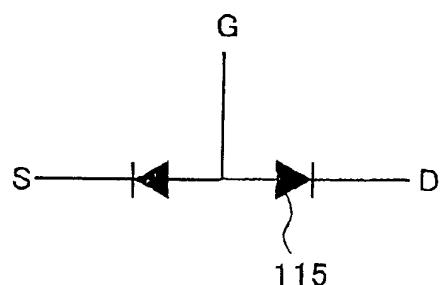
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FIG.30A



Prior Art

FIG.30B



Prior Art

App No.: Not Yet Assigned
Inventor: Tetsuro ASANO et al.
Docket No.: 492322014200
Title: SWITCHING CIRCUIT DEVICE

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FIG.31A

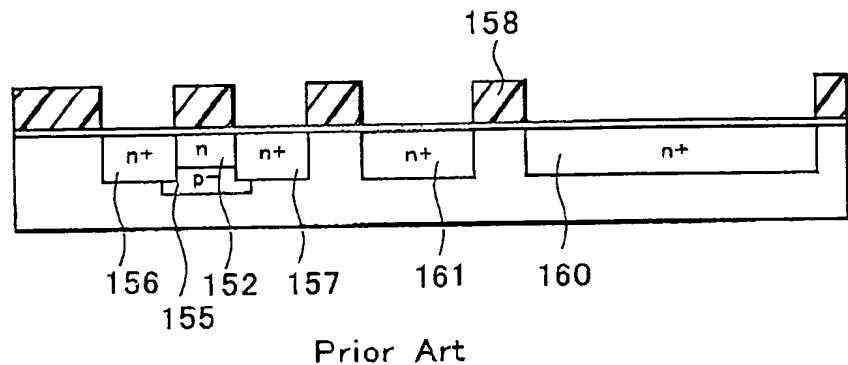


FIG.31B

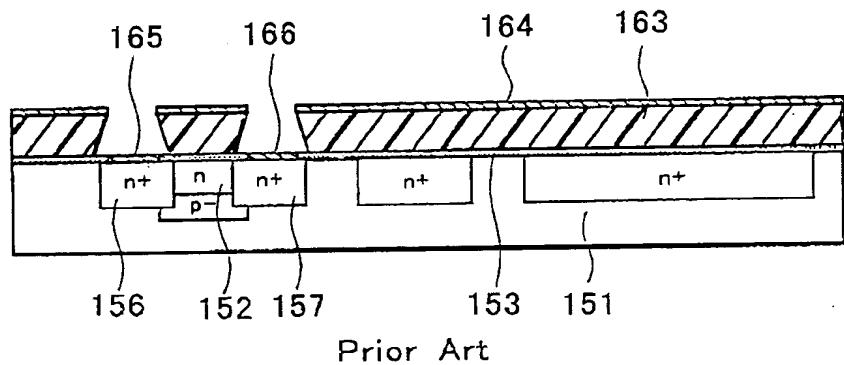


FIG.31C

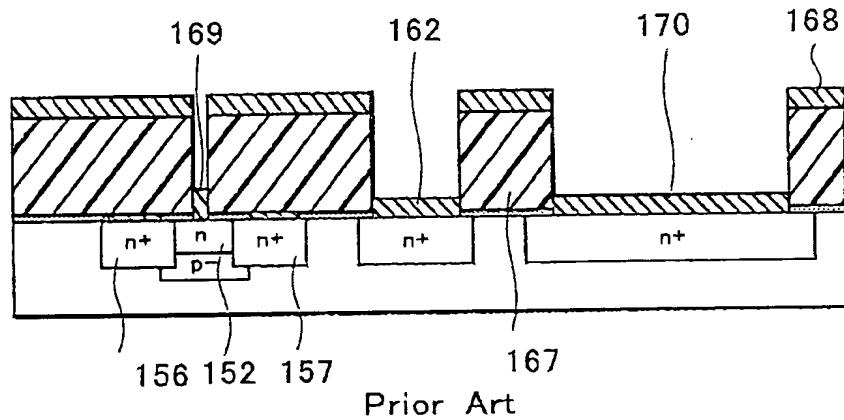


FIG.31D

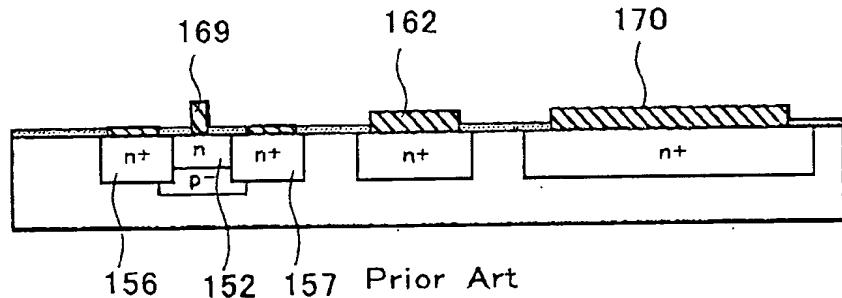


FIG.32A

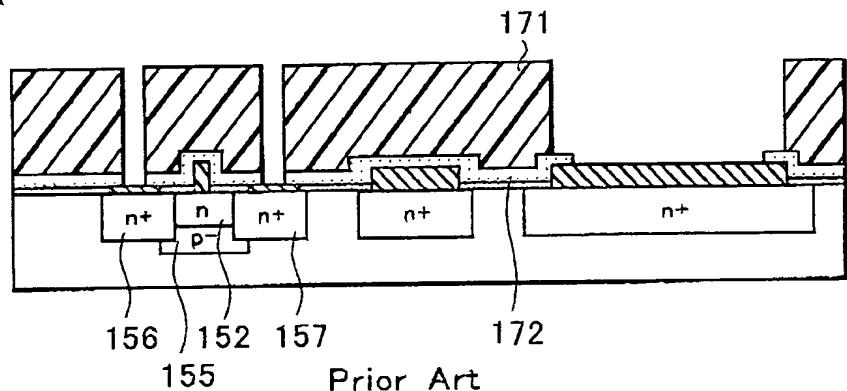


FIG.32B

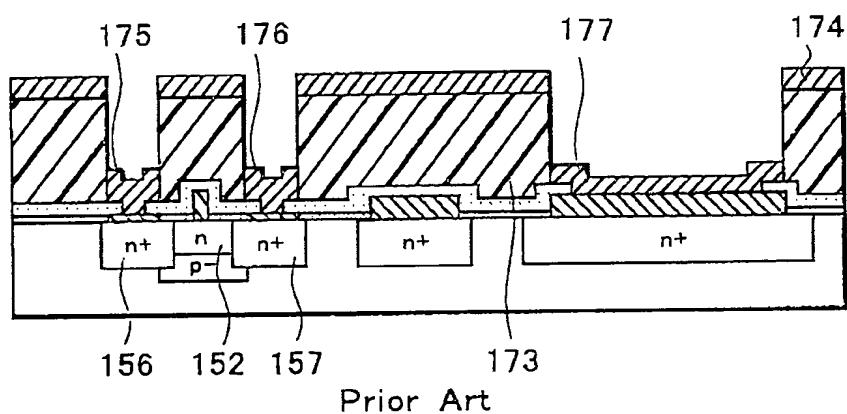


FIG.32C

